

## Observation of "Intrinsic" Surface States at the $\text{TiO}_2$ - Aqueous-Electrolyte Interface by Sub-Band-Gap Electroreflectance Spectroscopy

Withana Siripala and Micha Tomkiewicz

*Department of Physics, Brooklyn College of the City University of New York, Brooklyn, New York 11210*

(Received 29 September 1982)

Surface states were detected with sub-band-gap electroreflectance spectroscopy in the presence of electrolytes that can adsorb on the surface of  $\text{TiO}_2$ . The energy of these states is located 1.3 eV below the conduction band and they can be detected only in the weak accumulation mode. The potential distribution at the interface as a function of the electrolyte was investigated by impedance spectroscopy. These results were interpreted in terms of "intrinsic" surface states of the unsolvated surface.